

In a foreign animal disease (FAD) incident, control and containment of the disease agent is essential to eradication and recovery. Quarantine and movement control (QMC) are critical activities to protect animal health, by helping to prevent the disease agent from being transmitted to non-infected livestock and poultry populations. QMC stops and controls movements in a regulatory Control Area. This presentation focuses on diseases spread by direct and indirect contact rather than vector-borne diseases, as QMC is not particularly effective at preventing the movement of mobile insect vectors. However, QMC activities can still prevent the movement of infected hosts, which may be important in vector-borne FAD incidents. In an incident, quarantines and movement controls are handled through Incident Command, following local, State, and Federal laws/regulations. [This information was derived from the Foreign Animal Disease Preparedness and Response (FAD PReP)/National Animal Health Emergency Management System (NAHEMS) Guidelines: Quarantine and Movement Control (2014)].

This Presentation

Definition of relevant terms
Authority of responsible agencies
FAD response activities
General QMC considerations
Concepts of permitting
Personnel

This information is intended to provide all responders with a common general understanding of how quarantine and movement control would be implemented in an FAD incident in domestic livestock or poultry. This presentation addresses the following topics: the definition of relevant terms, authority of agencies responsible for QMC activities, FAD response activities, and general considerations of quarantines and movement control. Additionally, it addresses the concepts of permitting and authorized movement, and describes responsibilities of personnel who must ensure smooth operations during an outbreak. Additional presentations discussing these issues in greater detail are available.

S **Definitions** 1 Quarantine Stringent restrictions i - Prohibits movement from specified premises, area, or region d · Hold order - Temporary, during investigation e - Usually under State authority Standstill notice - Temporary, prohibits new movement 3 - Federal authority/official notice

For the purpose of this document, the following terms and definitions will be used: **Quarantine** refers to imposing stringent restrictions on entering or leaving a premises, area, or region where disease is known to exist or is suspected. During an FAD outbreak, a quarantine broadly prohibits the movement of animals, animal products, and fomites (e.g. equipment, vehicles, clothing, footwear) from a specified premises, area, or region. Consideration is given to critical movements like feed trucks.

Hold order is a temporary order, similar in effect to a quarantine, typically implemented while additional diagnostics or investigation is conducted. Hold orders are usually, but not always, under State authority: definition, scope, and terminology may vary by State.

Standstill notice is the temporary prohibition of the initiation of any new movement of the susceptible species in a defined area. A standstill notice would be implemented at a Federal level, put into effect through an official notice in the Federal Register.

Definitions cont'd

• Movement control

• Controls movement in Control Area

- Movement from premises with no evidence of infection

- Permits based on criteria

• Continuity of business (COB)

- Managed movement for specific commodity

A continuation of these definitions include:

Movement control refers to controlling the movement of animals, animal products, and fomites in a regulatory Control Area. These movements are from non-infected premises, require permits, and are based on specific criteria to ensure that such movement poses a negligible risk of pathogen transmission.

Continuity of business (COB) is a specific type of movement control known as managed movement. COB typically focuses on a specific commodity and is intended to mitigate the economic effects of a regulatory Control Area.

S Goals of FAD Response I 1. Detect, control, contain FAD quickly i 2. Eradicate FAD, protective strategies 3. Facilitate COB d for non-infected animals and e products Allow farms to resume normal operations and U.S. to regain disease-free status as quickly as 5 possible

QMC activities are a critical component of a response effort. The three goals of an FAD outbreak response are as follows: To: (1) detect, control, and contain the FAD in animals as quickly as possible; (2) eradicate the FAD using strategies that seek to stabilize animal agriculture, the food supply, and the economy, and to protect public health and the environment; and (3) provide science- and risk-based approaches and systems to facilitate COB for non-infected animals and non-contaminated animal products. Achieving these three goals will allow individual livestock facilities, States, Tribes, regions, and industries to resume normal production as quickly as possible. They will also allow the United States to regain FAD-free status without the response effort causing more disruption and damage than the disease outbreak itself. [This photo depicts a truck transporting livestock, one type of movement that will be evaluated and addressed by QMC activities. Photo source: Alex Ramirez, Iowa State University]

S Goals of QMC 1 Preparedness goals i affected locations d

- Develop effective QMC plans for

- Develop effective movement control and permit plans for non-infected locations
- · Response goals

e

6

- Implement QMC quickly
- Consider competing priorities disease transmission vs. critical

The QMC-specific goals support overall FAD response goals. Preparedness goals are as follows:

- To work with stakeholders to develop effective OMC plans for affected premises, areas, or regions.
- To work with stakeholders to develop effective movement control and permit plans for non-infected premises, areas, or regions.

The response goals are as follows:

- Once a Control Area has been established, implement QMC as rapidly as possible.
- Ensure QMC considers competing priorities, weighing the risk of disease transmission against the need for critical movements (e.g., feed trucks) and business continuity.



Both Federal and State agencies have authority to protect against and respond to animal disease. The Code of Laws of the United States of America (U.S.C.) and the Code of Federal Regulations (CFR) are codified authorities representing different stages of the Federal legislative process. The U.S.C. provides the general and permanent statutes of the United States, which are passed by Congress and signed by the President. Executive branch agencies then interpret the U.S.C., developing detailed regulations in the CFR. The CFR is developed through a public rulemaking process, where the public is allowed to comment. In an FAD incident response, the U.S.C. and CFR provide policy, via statutes and regulations, for USDA; interim regulations can be implemented—in the event of an outbreak—to prevent the spread of disease.

S Federal Authority 1 APHIS authority through AHPA Act i · Secretary of Ag is authorized to:

- Prevent, detect, control, and eradicate diseases and pests of animals - Protect animal, human health and welfare, and economic interests - Prohibit importation, entry or interstate movement throughout US Prevent the introduction or dissemination of disease

APHIS receives its regulatory authority from the Animal Health Protection Act (AHPA), 7 U.S.C. 8301 et seq. The AHPA authorizes the Secretary of Agriculture to carry out operations and measures to prevent, detect, control, and eradicate diseases and pests of animals, including foreign animal and emerging diseases, in order to protect animal health, the health and welfare of people, economic interests of livestock and related industries, the environment, and interstate and foreign commerce in animals and other articles. The Secretary may also prohibit or restrict the importation, entry, or interstate movement of any animal, article, or means of conveyance to prevent the introduction into or dissemination within the United States of any pest or disease of livestock (7 U.S.C. 8303-8305). Title 9 of the CFR provides detailed USDA APHIS administrative regulations for the control and eradication of animal diseases, including FADs and emerging animal diseases.

d

е

8

S State Authority ١ · Initially, State, Tribal, local authorities and resources i · Authority granted to SAHO varies d Ouarantine - May be issued on FAD detection or e - Scope based on specific authority Intended to control disease intrastate Extraordinary emergency (USDA) 9 Authorized to control intrastate, interstate, and international movement

Initial FAD response and enforcement of QMC will involve State, Tribal, and local authorities and resources. Authority granted to the State Animal Health Official (SAHO) varies from State to State. Legal authority is usually granted by a legislating body, and by an executive agency. Quarantine of a premises—or movement restrictions—within a Control Area may be issued, based on an FAD detection or a suspected FAD. These may include quarantines of an individual pen, herd, flock, premises, county, section, or area, depending on the specific State authority. State quarantines are used to stop and control the spread of an infectious or contagious disease within a State. While typically States control intrastate movements, it is important to recognize that if the United States Secretary of Agriculture declares an Extraordinary Emergency, the Federal government is then authorized to control *intrastate* movement, in addition to *interstate* movement and *international* movement. Additionally, an FAD outbreak may result in emergency regulatory intervention by State, Tribal Nations, and Federal authorities via a Unified Command.

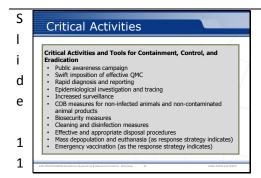
S
I
i
d
Response to a Foreign
Animal Disease Outbreak

1
0
TOTAL MARKET CLASSES A LABORITATION SERVICE SERVICE

During an FAD response, many activities must be conducted simultaneously to achieve the goals of an FAD response. These activities must be conducted in a coordinated manner. Three epidemiologic principles form the foundation of any FAD response strategy to contain, control, and ultimately eradicate the disease in the U.S. domestic livestock or poultry population. These epidemiologic principles are, to:

- Prevent contact between the disease and susceptible animals.
- Stop the production of the disease agent.
- Increase the disease resistance of susceptible animals or reduce the shedding of the disease agent in infected or exposed animals.

The response activities based on these three principles are listed on the next slide.



This chart lists some of the critical activities which occur in an FAD outbreak, including QMC. Other activities, such as surveillance, diagnostic testing, COB, disposal, and vaccination will also help to rapidly and effectively control, contain, and eradicate the disease. For example, the quarantine of infected animals, movement controls in the Control Area, and biosecurity measures aid in preventing contact between the disease and susceptible animals. Depopulation, as necessary, stops the production of the disease agent. Emergency vaccination, if a suitable vaccine is available and can be administered in a timely manner, can increase the disease resistance of susceptible animals. [Critical Activities and Tools for Containment, Control, and Eradication. Content provided by: USDA]



During an FAD outbreak, geographic locations will be classified or designated according to specific criteria related to disease or disease-free status. These designations help to associate specific response activities with specific locations. These figures show examples of zones and areas on the left, and examples of the locations of premises that have been designated with specific classifications on the right. QMC activities will focus on the Control Area - comprised of the (dark pink) Infected Zone plus the (blue) encircling Buffer Zone. Quarantines will be implemented for Infected, Contact, and Suspect Premises in the Control Area. It is important to note that these figures are examples, and are not to scale. More detail on designations of zones, areas, and premises, and the factors considered in determining their size is explained in the FAD PReP/NAHEMS Guidelines: Ouarantine and Movement Control document, APHIS FAD Framework: Response Strategies (Manual 2-0) and in the Zones, Areas and Premises PowerPoint presentation associated with this series. [Example Zones, Areas, and Premises. Diagrams provided by: USDA; Graphic illustration by: Dani Ausen, Iowa State University]

S
I
i
d
General Considerations for
e
Quarantine and Movement
Control

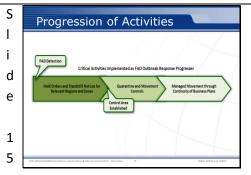
1
3
76/76/74/04/05/Guidene Quartine & Novement Cherch Charact
1
2
UDA/MS and GETM

It is reasonable to assume that movement activities that pose a high risk of transmitting disease will fall under a stop movement order (or a similar term used by States, such as embargo), and that movement controls or continuity of business (managed movement plans) will be applied to critical movements, and/or to those movements involving lower risk, depending upon the situation. Close coordination of authority, resources, and expertise will be necessary between Federal, State, local, and Tribal governments. Planning for an emergency is critical in order to develop a consistent, coordinated approach to response and resource allocation in a regional or multi-State disease outbreak. A priority of preparedness planning should be to discuss, mitigate, or resolve competing priorities prior to an incident.

Coordination and Planning Coordination conducted through ICS Planning enhances efficiency Determine authorities Identify resources Identify agricultural routes Develop communications plans Ensure appropriate supplies Understand roles and responsibilities

Coordination of priorities and resources will be conducted through the Incident Command System (ICS). Federal and State animal health officials will need to work closely with emergency management agencies in identifying available State and local resources from sources such as public works departments, departments of transportation, departments of wildlife and natural resources, law enforcement, public health, universities, veterinary reserve groups, and local contractors. Planning at every level, including industry, will reduce the time it takes to control, contain, and eradicate the outbreak. Planning is necessary to:

- Determine the legal authority of agencies and protocols for issuing, lifting, and enforcing a quarantine, for biosecurity, permitting, traffic control, and road maintenance.
- Identify resources that are trained and ready, those that need to be developed, those that may be shared through agreements.
- Identify major agricultural routes (livestock and pick-up/delivery of products such as milk and feed) and suitable checkpoint sites on those routes.
- Develop communications plans to share information internally and externally.
- Ensure appropriate supplies and equipment such as personal protective equipment (PPE) and disinfectants.
- Understand the different roles and responsibilities of those involved in the response.



QMC-imposed limits on movement can affect the ability of a producer or processor to continue key operations during an outbreak. Business processes, including production and distribution, may be disrupted. COB, on the other hand, manages the movement of non-infected animals and non-contaminated animal products in a regulatory Control Area. Managed movement helps agricultural industries maintain essential business functions, or return to business during an FAD response, while effectively managing the risk of disease spread and threat to animal health and public health. The ultimate goal of COB is to minimize unintended negative effects of the disease and disease response on the affected industries and consumers while still achieving the goals of a disease response. From the time an FAD is detected, transitioning between standstill notices, quarantine and movement control, to management movement through continuity of business plans requires effective preparedness planning ahead of an event between all relevant partners. [Critical Activities Implemented as FAD Outbreak Response Progresses. Content provided by: USDA]



An FAD response effort will begin locally, involving local, State, and Tribal authority and resources. If needed, Federal authority and resources will then be employed. In an FAD outbreak, there may be both State quarantines and Federal quarantines, but typically, an individual premises quarantine will be issued under State authority. Regardless of the authority to issue a quarantine, Incident Command should make a strong effort to have clear communication and appropriate educational materials on disease transmission to gain voluntary compliance from producers, families, and others involved in the quarantine.

S Implementing Premises Quarantin Ι · State authority varies by State i · Criteria for issuance varies by State · Animals may, or may not be present d - Notify owner/agent and secure premises e - Establish biosecurity and restrict Develop contingency plans Prepare for essential movement and 1 medical emergencies 7

The authority of the SAHO to issue a quarantine or a "hold order" on a premises varies by State. A quarantine may be issued based on a presumptive positive diagnosis, pending laboratory confirmation, or only on the basis of a confirmed positive. An individual premises quarantine or hold order is typically requested by a foreign animal disease diagnostician (FADD) who has investigated and determined the findings are consistent with an FAD. Infected, Contact, and Suspect Premises are subject to individual premises quarantine. Quarantines may be imposed on facilities with live animal inhabitants (farms or feedlots), as well as those without (auction markets). Implementing a quarantine involves notifying the owner/agent, securing the premises to prevent unauthorized movement, establishing biosecurity procedures, as well as restricting movement of animals, animal products and fomites. It also involves contingency planning to allow for essential movements and to quickly obtain medical care for any sick or injured personnel, while minimizing the risk of pathogen transmission.



A Federal quarantine (or a Federal area quarantine) may be issued when requested by a SAHO, or as directed by the U.S. Secretary of Agriculture. As defined in 9 CFR 71. a quarantined area is as follows: "The States, Territories, or the District of Columbia or portions thereof quarantined by the Secretary of Agriculture for the specific contagious, infections, or communicable animal disease mentioned in each part."

S Implementing Federal Area Quarantii 1 · Federal authority to quarantine a i Control Area

> - Disease agent, trading considerations, State-specific issues, epidemiology Appear as Federal Register Notice

- In addition to premises quarantines
- · Unified Command, State and Federal
- · States efforts reimbursed

Federal area quarantines are typically applied to a regulatory Control Area. Factors used to determine this area are based on characteristics of the disease agent, trading partner considerations, State-specific issues, and the epidemiology of the outbreak. Federal area quarantines must appear as a Federal Register Notice. A Federal quarantine may exist in addition to individual premises quarantines under State authorities. Under a Unified Command, both State and Federal personnel are likely to be involved in establishing, securing, and maintaining a Federal quarantine. USDA may request that the affected States contribute resources to maintain and enforce the quarantine; USDA will reimburse States for this effort via cooperative agreement. Under certain circumstances, a Federal standstill notice prohibiting new movements for a short period of time may facilitate a rapid evaluation of the epidemiology of the outbreak.

d

е

1

9

S Quarantine Release 1 · Premises quarantine released if i confident with disease status Federal area quarantine released d with Federal Register notice - Does not need to be all at once e - Portions at a time reducing the size of - Trade considerations or epidemiologic 2 information 0

Individual premises are typically released from quarantine prior to the release of the Federal area quarantine in which they are located. Incident Command needs to have a high level of confidence that the premises, and surrounding premises in a defined geographical area, are free from the disease agent. Federal area quarantines are typically in place until the end of an incident. A Federal Register notice will indicate the release of Federal quarantine. The entire area of a Federal quarantine does not need to be released simultaneously. There may be reasons—including, but not limited to trade considerations or epidemiologic information—to release portions of the Federal quarantine, in other words, reducing the size of the Control Area gradually before the complete release of the entire Federal area quarantine.



Movement controls are the critical activity which accompanies quarantines. The term "movement control" refers to controlling the movement of animals, animal products, and fomites into, within, and out of a regulatory Control Area while minimizing the risk of pathogen transmission. For individual premises, quarantines are imposed on Infected, Contact, and Suspect Premises, while movement controls focus on At-Risk and Monitored Premises. Continuity of business, or management movement, establishes specific criteria for the movement of animals or commodities from premises. Movements shown to have negligible risk of pathogen transmission, and some essential movements, may be authorized by the issuance of movement permits by Incident Command.

Control Area Movements

Output

- Risk of disease transmission

- Circumstances of the outbreak

2

2

In APHIS Foreign Animal Disease Framework: Response Strategies (FAD PReP Manual 2-0), broad guidance is provided for moving animals, animal products, and fomites into, out of, and within a regulatory Control Area. The decision to authorize movements is determined by specific criteria based on science, the risk of disease transmission, and the circumstances of the outbreak. For example, susceptible livestock are generally prohibited from moving from outside the Control Area onto Infected, Suspect or Contact Premises within the Control Area. However, the same livestock may be authorized to move onto At-Risk or Monitored Premises, if specific criteria are met and a permit to move is granted. Movement from inside a Control Area to a location outside of the Control Area is highly controlled. At-Risk Premises must become Monitored Premises to move susceptible livestock or poultry out of a Control Area by permit. Biosecurity measures are essential to all authorized movements to reduce the risk of further transmitting disease and infecting new populations of animals.

S Continuity of Business 1 · COB, managed movement i - Specific criteria for movement Voluntary participation d Criteria е - Surveillance - Cleaning, disinfection - Biosecurity measures 2 - Epidemiological information 3

Continuity of business (COB) or managed movement is a specific type of movement control, which establishes specific criteria for the movement of certain livestock species and commodities from a premises. Producer participation in managed movement plans is *voluntary*. If producers choose to participate, specific criteria are *required* for movement. Criteria may be specific for the commodity, the origin and destination, as well as the disease pathogen. Managed movement mitigates the impact of the Federal area quarantine on unaffected producers, and is risk- and science-based, weighing the risk of disease transmission. The criteria for these permitted movements typically require surveillance, cleaning and disinfection, biosecurity measures, and epidemiological information. [The milk in this milk truck is one of the commodities that may be permitted to move. Photo source: Danelle Bickett-Weddle, Iowa State University]

S Permitting 1 · Biosecure movement - three types i - Essential movements - Commonly allowed movements d - Voluntary COB movements · Considers risk assessments, e surveillance, biosecurity, national and OIE standards · EMRS 2.0 is the system of record for 2 any FAD incident 4

Permitting will facilitate the biosecure movement of animals, animal products, and other materials without creating an unacceptable risk of disease spread. Permits will cover three types of movement - essential movements (or specific permits) from quarantined premises, commonly allowed movements (or blanket permits) from At-Risk and Monitored Premises out of the Control Area, as well as permits for voluntary COB movements. The process of issuing a permit considers risk assessments, surveillance information, biosecurity procedures, as well as national and World Organization for Animal Health (OIE) standards. Personnel responsible for permitting need to have access to the most recent information about the outbreak. New epidemiological and situational information may change permitting requirements. Data collection, management, and analysis capabilities are required. The USDA's Emergency Management Response System (EMRS) 2.0 is the system of record for any FAD incident in the United States.

S Checkpoints 1 · Enforce requirements i - May require permit for movement · Verifies vehicle is in compliance d with regulations Standard operating procedures e provided through Incident Command · Animals not held at checkpoints · Violations reported to officials 2 5

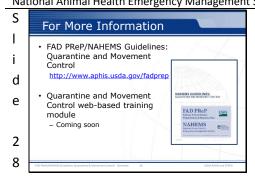
Checkpoints are intended to enforce movement control requirements. Conveyances moving out of the quarantined area may require a permit for movement. This permit provides verification that a vehicle is properly cleaned and disinfected and is transporting animals, fomites, or products in accordance with State and Federal laws and regulations. Under most circumstances, animals should not be held at a checkpoint. Depending on the level of compliance, the conveyance should be returned to the premises of origin (if it cannot be permitted), or sent to its destination (if permitted), or Incident Command will provide further instructions. Violations, including failure to have the necessary permit, should be reported to the appropriate officials.



Typically, personnel in the Animal Movement and Permits Group will perform QMC activities, though other personnel are likely to be involved. Responsibilities may include providing recommendations for quarantines and guidance on permitted movements, responding to movement requests, issuing and tracking permits, communicating with owners/agents of animals subject to QMC, establishing premises quarantine, collaborating with other authorities and response personnel to enforce QMC protocols and implement biosecurity procedures, and staffing check points to ensure compliance with the permit system. All personnel need to be properly trained so they can work efficiently and collaboratively. In addition, personnel need to be aware of the hazards, and take the proper precautions to protect themselves.

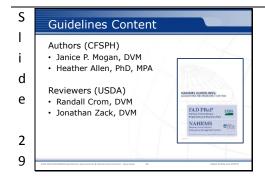
S Hazards 1 Responder Safety i - Orientation covering precautions - Required personal protective equipment d Biosecurity e - Prevent disease spread - Knowingly or unknowingly contaminated - Understand pathogen transmission - Work zones control access 2 7

The personal safety of each responder, particularly if a zoonotic disease is involved, is essential. All personnel should receive a complete orientation covering potential hazards, necessary safety precautions, and hygiene requirements. Required personal protective equipment (PPE) may include outerwear, safety goggles, high visibility vests, and respirators. The hazard of spreading disease to susceptible animal populations must be addressed through biosecurity. QMC personnel, particularly those assigned on-site to quarantined premises, may work in known contaminated areas. Personnel responsible for evaluating the biosecurity of movements or assigned to checkpoints may unknowingly become contaminated. It is imperative to fully understand pathogen transmission routes. For all authorized movements, proper cleaning and disinfection is necessary. The establishment of work zones control access to enter and leave quarantined premises and help prevent contamination of clean areas. In addition, a waiting period, defined by Incident Command, must be enforced where personnel avoid contact with any susceptible unaffected animal species.

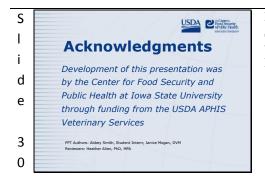


More details can be obtained from the sources listed on the slide, available on the USDA website (http://www.aphis.usda.gov/fadprep).

The Quarantine and Movement Control web-based training module is in development and coming soon.



The print version of the Guidelines document is an excellent source for more detailed information. This slide acknowledges the Guidelines' authors and reviewers. It can be accessed at http://www.aphis.usda.gov/fadprep.



Information provided in this presentation was developed by the Center for Food Security and Public Health at Iowa State University College of Veterinary Medicine, through funding from the US Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services.